

GIS Program

A Geographic Information System (GIS) will help the Program analyze the spatial dimension of proposed program actions and their impacts. The primary goal of the GIS effort is to provide access to critical geospatial databases to assist the ERP and Conservation Strategy program managers with the refinement of Ecosystem Restoration Program (ERP) actions, and evaluation of potential impacts, including the effects of proposed CALFED actions on sensitive species. As the ERP is refined and integrated with other Program components, and as the Program moves closer to the implementation phase and refinement of the Conservation Strategy, the Program will need to analyze how its proposed actions might look on the ground when implemented. Because the preferred alternative is regional in scope and is composed of hundreds of actions in many different categories, it will be important for Program and CALFED agency staff, as well as stakeholders, to visualize the location of program actions and potential impacts. In the longer-term, the GIS will help CALFED to track the efficacy of program actions.

FY 99 tasks will include the following in cooperation with the CALFED agencies and the University of California, Davis:

- acquire framework geospatial data including hydrography, roads, watershed boundaries, satellite imagery, sensitive species and habitat locations;
- digitize early implementation and proposed ERP Stage I actions; and
- digitize restoration projects not related to the CALFED Program as needed.

This information will be used to:

- analyze the spatial relationships among and between existing protected areas and existing and proposed restoration and conservation actions;
- assist with the environmental impact analysis of the proposed actions;
- analyze habitat and species relationships and the potential beneficial and adverse impacts of the ERP and other CALFED programs on sensitive species; and
- develop maps, tables and graphics of natural and cultural resource features and project locations and descriptions.

Levee Program

CALFED is in the process of developing information on the costs, benefits, and linkages to CALFED objectives of including the Suisun Marsh's 230 miles of exterior levees in CALFED's Levee System Integrity Program. The special support program will fund these tasks specific to Suisun Marsh.

The Suisun Marsh is the largest remaining coastal wetland in California. It encompasses 116,000 acres: 52,000 acres of managed wetlands, 27,700 acres of upland grasses, 6,300 acres of tidal wetlands, and 30,000 acres of bays and sloughs. Ensuring the integrity of the exterior levees in the Suisun Marsh is critical to sustaining seasonal wetland values provided by the Marsh's managed wetlands. Improved levees would ensure that conversion to tidal wetlands will not be due to levee failure, but instead, will be planned with consideration of land owner support, ERP targets, regional wetland goals, and endangered species recovery plans.

Water Quality Program

The CALFED Water Quality Program strives to address and reduce contaminant effects on the Bay-Delta ecosystem. The Bay-Delta ecosystem and any restored wetlands constructed by the CALFED Ecosystem Restoration Program are affected by the Bay-Delta water quality. Toxicity of surface waters may reduce the productivity of the wetlands or eliminate portions of the food chain. Toxicity reduction is a goal of the ERP Strategic Plan. Other contaminants in surface water, such as mercury, have a bioaccumulative effect on the ecosystem and may effectively contaminate constructed shallow water habitat for many years. Contaminant reduction is proposed through a series of research projects to determine aerial and temporal extent on problems, identification of toxicants, mechanisms of toxic and bioaccumulative effects, and remedial efforts to stop toxic and bioaccumulative effects. Reduction of toxicants and bioaccumulative constituents ensures protection of investments made in ecosystem restoration. On the converse side, restored shallow water habitat may inadvertently increase Total Organic Carbon (TOC) at diversion pumps in the Delta, which adversely impacts drinking water beneficial uses of the surface water. The CALFED Water Quality Program strives to address and reduce impacts on drinking facilities through controlling TOC discharges to the delta. Studies and modeling are necessary to most efficiently locate restored habitat to reduce impacts on drinking water uses of delta water.

The major tasks of the Water Quality Program in Fiscal Year 99 include:

Revising Water Quality Program Plan

Develop, refine and prioritize detailed water quality actions to be taken during the first stage of the implementation phase (Stage 1) of the CALFED Program. Document interim results for publication in December 1998, and produce final documentation for publication in December 1999. Some action details include:

- Develop Best Management practices for use of pesticides in urban areas.
- Develop Best Management Practices for use of pesticides in agricultural applications
- Implement Best Management Practices to reduce sediment that carries Organochlorine pesticides into the Bay-Delta.

- Conduct ecological effects evaluations for toxicants such as pesticides.
- Project feasibility studies and pilot projects to reduce toxicity of surface water.
- Continue active support for agency and stakeholder involvement in the water quality program element through activities of the Water Quality Technical Group.

Watershed Management Program

Successfully achieving a complex set of natural resource management goals is best approached using a community based process focused on entire watersheds. Through this approach, local watershed protection, restoration, and enhancement efforts are integrated with the variety of other management activities occurring in a watershed in a way that enables a community to achieve common natural resource goals in a more effective and durable manner. Coordination of these efforts includes the exchange of information, sharing of experiences, and building the capacity of communities to more effectively assist with the management of their watersheds. The CALFED Bay-Delta Program's Watershed plan is being designed to assist communities in achieving their natural resource management goals using this community based watershed focused approach.

Tasks for FY 99 include:

- Refining the Watershed Management Strategy.
- Identifying watershed implementation actions.
- Participating in the development of watershed component of CMARP.
- Developing a technical assistance plan and clearinghouse function to assist local groups.

Water Use Efficiency/Water Transfer Program

Implementation of water use efficiency measures, especially in the agricultural sector can indirectly or directly provide benefits to water quality and overall ecosystem health. Water acquisitions made for instream flow augmentation will necessarily need to follow state and federal law regarding the transfer of water from existing water rights holders to the ecosystem.

Several of the specific tasks requiring completion prior to a final Programmatic EIR/EIS, as identified by the CALFED Water Use Efficiency Program, relate to the linkage between conservation and ecosystem health. For example, CALFED is working to develop a program for implementation of water use efficiency to achieve multiple benefits. This effort includes developing a program to identify, prioritize, fund, and implement improvements in local water management that have water quality and ecosystem health benefits (i.e., reduced diversion impacts, improve flow conditions in stream reaches).

Additionally, the Water Use Efficiency Program is working with CALFED agencies to develop assurances for wildlife refuge water management. CALFED agencies have identified 14 effective water use practices that should be evaluated by every wildlife manager. In order to provide assurance of effective water use on refuges, a public process for review of refuge water management practices will be developed, in coordination with CALFED agencies. This process is similar in structure to evaluation processes being used by the urban and agricultural sectors.

Furthermore, efforts underway in the Water Transfer Program are developing a framework of actions, policies, and processes that will effect, among other things, the transfer of water for instream flows. This framework is essential to the success of environmental water acquisition efforts over the next few years. CALFED is working to resolve issues such as instream flow (1707) transfer tracking, environmental protection in source areas and rules and guidelines for environmental water transfers.

Ecosystem Restoration Program

The Ecosystem Restoration Program includes both the Early Implementation Branch and the development of the Ecosystem Restoration Program Plan. The tasks for these two programs include the following for FY 99:

- Completion of the Strategic Plan;
- Development of local implementation strategies in cooperation with local groups already involved in restoration planning or watershed management;
- Refining conceptual models, indicators of ecological health, and quantifiable objects;
- Development of the Ecosystem Restoration Science Program;
- Implementation of previously selected restoration projects and selection of FY 99 projects;
- Improved coordination and integration of restoration efforts throughout the watershed.

Conservation Strategy

The interagency conservation strategy team is developing an ecosystem/habitat based biological assessment under the federal Endangered Species Act and a programmatic Natural Community Conservation Program plan. The strategy will broadly evaluate the effects of CALFED's programmatic actions, both beneficial and detrimental, on 204 species addressed in the strategy. The strategy will assess the ability of CALFED's Ecosystem Restoration Program Plan in attaining the species goals adopted by the Program and its ability to adequately conserve the target habitats and processes. Through its conservation measures, the strategy will provide refinements to the ERP and to the other CALFED common

programs and lay out mitigation processes and targets. The conservation strategy team will also be completing a more in depth analysis of CALFED's Stage 1 actions on the 204 species addressed by the strategy.

Comprehensive Monitoring, Research, and Assessment Program

The CMARP Steering Committee, working with stakeholders, agency and CALFED management have developed a draft report recommending the implementation and continued refinement of a monitoring and research program that provides support to CALFED's programs during 1999 and beyond. A final report will be completed and brought to CALFED's Policy Team for approval in January 1999. Fiscal Year 99 funds and previously allocated unspent funds will be used to manage CMARP, to implement a few high priority tasks and to refine monitoring and research program designs.

Priority tasks identified for implementation in 1999 include the following:

- Developing an institutional structure for CMARP, including the selection of a Chief Scientist;
- Continuing the development and implementation of a Category III monitoring structure to determine whether stated objectives of near-term ecosystem restoration projects have been met and to provide guidance for assessing future restoration needs;
- Assessing diversion effects on fish;
- Addressing municipal source water quality issues;
- Marking hatchery salmon;
- Developing topographic and bathymetric maps of the Delta;
- Documenting and assessing effects of aquatic species introductions;
- Reviewing the streamflow gauge network system.

Continued refinement of other CMARP elements addressing CALFED program needs will also be conducted during FY 99. These include developing indicators, implementing a data reporting system, developing adaptive management partnerships, integrating monitoring elements across CALFED programs, and developing Quality Assurance and Quality Control protocols for monitoring elements.

Coordinated Permitting Program

The Coordinated Permitting Program is developing a systematic and coordinated approach to comply with State and Federal environmental documentation and permit processes for implementation of the CALFED Bay-Delta Program actions, especially the early implementation restoration actions.